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INTERVIEW SUMMARY

The Examiner and her supervisor (Examiner Samuel Barts) are thanked for the courtesies extended in the telephonic Examiner Interview conducted on July 19, 2007 with the undersigned. In the Interview, the Examiners agreed that the claims would be allowable if the Applicants entered a Declaration under 37 CFR § 1.132 confirming that the processes claimed produced unexpected results. As agreed, a Declaration of Dr. Werner Bonrath under 37 CFR § 1.132 (Exhibit A) showing that using molar ratios of alkali metal hydroxide to the starting carbonyl compound of less than 1:200 produces a significantly smaller percent yield of an unwanted diol by-product as compared to processes using molar ratios greater than 1:200, such as those contemplated by the Tedeschi, patent cited by the Examiner, is submitted herewith.

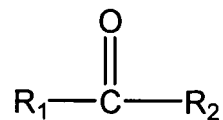
REMARKS

Claims 1-20 were rejected solely under 35 USC § 103(a) as being unpatentable over Tedeschi *et al.*, U.S. Patent No. 3,709,946 ("Tedeschi"). (Paper No. 20070316 at 3.)

For the reasons set forth below, the rejection, respectfully, is traversed.

Tedeschi discloses "a process for making acetylenic alcohols which does not require the use of an added solvent medium." (Col. 1, lines 63-65.) Tedeschi discloses that the process "involv[es] the reaction of acetylene with a ketone in the

presence of a co-catalyst system.” (Col. 1, lines 24-26.) Tedeschi further discloses that “any ketone may be reacted with the liquefied acetylene ... [and that] the preferred ketones have the general formula



wherein R₁ and R₂ may be the same or different radicals selected from the group consisting of hydrogen, alkyl groups containing 1-20 carbon atoms, ... cycloalkyl, and aryl.” (Col. 2, lines 19-34.) Tedeschi also discloses that the co-catalyst system is “an alkali metal hydroxide and liquid ammonia.” (Col. 1, lines 71-72.) Tedeschi discloses that the “alkali metal hydroxide is used in catalytic quantities, i.e., less than equimolar quantities with respect to the ketone, preferably at most about .5 mole per mole of ketone but at least .001 mole per mole of ketone.” (Col. 2, lines 60-64.) The molar ratios of metal alkali hydroxide to ketone specifically disclosed by Tedeschi are about 1:12, 1:6, and 1:6 (Examples 1, 2, and 3, respectively.)

In the final Office Action, the Examiner maintained the rejection of claims 1-20 under 35 USC § 103(a) over Tedeschi. (Paper No. 20070316 at 3.) The Examiner did not, however, reproduce the original rejection of the claims from the previous Office Action (September 25, 2006). For completeness, the rejection from the previous Office Action is summarized below.

In the original rejection, the Examiner asserted that Tedeschi discloses “a process for preparing an acetylenic alcohol by reacting a ketone with liquefied acetylene in the presence of a co-catalyst system comprising liquid ammonia and an alkali metal hydroxide.” (Paper No 20060914 at 2.)

The Examiner acknowledged, however, that Tedeschi differs from the claimed invention in that it does not specifically disclose the seven carbonyl compounds recited in, e.g., claim 1. Rather, the Examiner asserted that Tedeschi discloses "that any ketone may be used...." (*Id.* at 3.) In addition, the Examiner acknowledged that, Tedeschi differs from the claimed invention in that Tedeschi discloses "process conditions such as temperature, pressure and concentration [that] may not exactly fall within the claimed ranges." (*Id.*) The Examiner also acknowledged that "Tedeschi does not disclose a continuous process" as claimed. (*Id.*)

The Examiner then concluded that "since Tedeschi et al [discloses] that any ketone can be used in his process of preparing an acetylenic alcohol; it would be obvious ... to prepare such an alcohol using any ketone and expect to arrive at the desired acetylenic alcohol." (*Id.*)

In the final Office Action, the Examiner maintained the rejection of claim 1-20 and further "contend[ed] that it is indeed obvious to prepare acetylenic alcohol as claimed as Tedeschi et al has given a process to do just that. ... [and] that Tedeschi et al [discloses] the use of acetone in his preparation. Acetone is a direct homolog of the methyl ethyl ketone claimed." (Paper No. 20070316 at 2-3.) The Examiner concluded that "it would be obvious to ... utilize the process taught by Tedeschi et al in order to arrive at the same compounds or direct homologs of those same compounds as claimed by applicant." (*Id.* at 3.)

The Examiner then noted that "Applicant also claims that the molar ratio of acetone:alkali metal hydroxide¹ is much more than that claimed by applicant and that applicant claims 'less than 1:200', but wherein the description in Tedeschi et al only goes as low as 1:11.9 which is still greater than that which is claimed." (*Id.*) The Examiner then required that "applicant must introduce to the Examiner where there are unexpected results in order to claim the molar ratio as being patentably distinct over [Tedeschi]. Tedeschi et al is preparing the same class of compounds as the applicant has claimed; therefore it is not considered to be patentably distinct without a showing of unexpected results." (*Id.*)

In the previous response, arguments demonstrating the legal and factual deficiencies of the rejection were presented. In the interest of economy, these arguments are incorporated by reference, but will not be reproduced herein. We simply note that the Examiner's "response" (Paper No. 20070316 at 2-3) to these arguments provided only the "examiner's contentions", which add nothing substantive to fill the legal and factual gaps in the rejection. Accordingly, the previous arguments stand un rebutted and for those reasons alone the rejection should be withdrawn.

Notwithstanding the infirmities of the rejection noted above, in an effort to further prosecution, we submit herewith a Declaration of Dr. Werner Bonrath under 37 CFR § 1.132 ("Declaration"). Dr. Bonrath, who is a named co-inventor, demonstrates in the Declaration that the claimed process produces unexpectedly and superior results compared to processes using molar ratios of alkali metal hydroxide to starting carbonyl

¹ The claimed ratio is a molar ratio of alkali metal hydroxide to carbonyl compound of less than 1:200. We note that Examiner has reversed the components of the ratio. We assume this is a simple typographical error and have proceeded with our comments accordingly.

compound of greater than 1:200 of the kind contemplated by Tedeschi. Specifically, the claimed ratios produce a yield of unwanted diol by-product less than 50% of that of processes using ratios greater than 1:200. In the declaration, Dr. Bonrath provides the results of five different experiments comprising 14 ethynylation reactions carried out under his supervision and direction. (Declaration, ¶¶ 11-16.) In the experiments, ethynylation reactions were carried out pursuant to the conditions set forth Example 1 of the specification. (*Id.*, ¶¶ 12-16.) As Dr. Bonrath describes, five different ethynylations were carried out at molar ratios of potassium hydroxide to starting carbonyl compound within the scope recited in claim 1 of the present invention (*i.e.*, "less than 1:200) and within ranges contemplated by Tedeschi for comparison. (*Id.*, Tables 1 and 2.)

At molar ratios of potassium hydroxide to starting carbonyl compound greater than 1:200 (*e.g.*, those contemplated by Tedeschi) the yield of the unwanted diol by-product is from 1.6 % to 3.6%. (*Id.*, Table 2.) To remove such unwanted by-products, additional time, reagents, and money must be expended. By contrast, in the reactions carried out according to the claimed process, the yield of the unwanted diol by-product is from 0.4 % to 1.5%. (*Id.*) Thus, as calculated by Dr. Bonrath, the yield of unwanted diol by-product is between **52% and 76% less** in the claimed reactions than in the reactions in which the molar ratio of potassium hydroxide to starting carbonyl compound is greater than 1:200. (*Id.* at ¶¶ 16-17.)

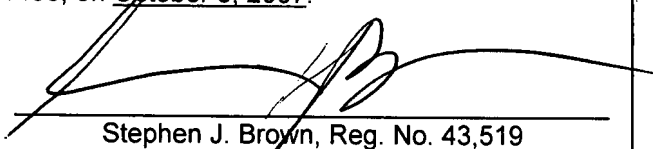
In view of the foregoing, Dr. Bonrath concluded that the results obtained using the presently claimed process provides unexpected and superior results, namely significantly less by-product compared to the process proposed by the Examiner using

the Tedeschi molar ratios. (*Id.* at ¶ 18.) Accordingly, it is respectfully submitted that Tedeschi does not render the present claims obvious.

In light of Dr. Bonrath's Declaration, and as agreed by the Examiner and her Supervisor, the rejection has been rendered moot and should be withdrawn.

Accordingly, for the reasons set forth above, entry of the Declaration of Dr. Werner Bonrath under 37 CFR § 1.132, withdrawal of the rejection, and allowance of the claims are respectfully requested. If the Examiner has any questions regarding this paper, please contact the undersigned.

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on October 3, 2007.


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